

CLAIMS

What is claimed is:

1. A processing device connecting element positioning aid, comprising:

a processing device operable to process at least one component;

a light emitting element operably producing a light beam, the light emitting element connectable to the processing device;

a reference position of the light emitting element from which the light emitting element is alignable to operably direct the light beam towards a reference point; and

at least one connecting element connectable to the at least one component at the reference point.

2. The positioning aid of Claim 1, wherein the light beam comprises a laser beam.

3. The positioning aid of Claim 1, wherein the connecting element comprises at least one of a rivet, a punch rivet, a blind rivet, a rivet nut, a weld nut, a weld stud, and a clip.

4. The positioning aid of Claim 1, comprising an envelope of the processing device, wherein the reference position is locatable outside of the envelope.

5. The positioning aid of Claim 4, comprising a machining space of the processing device, wherein the reference position is locatable outside of the machining space.

6. The positioning aid of Claim 5, wherein the reference position is bridged by a machining vertical line.

7. The positioning aid of Claim 6, comprising:
a device support having a center;
wherein the reference point is locatable on the machining vertical line and the machining vertical line is extendable through the center of the device support.

8. The positioning aid of Claim 7, wherein the reference point is arranged at a distance from the device support.

9. The positioning aid of Claim 8, wherein the distance comprises an adjustable distance increasable by a total material thickness of the at least one component.

10. The positioning aid of Claim 1, wherein the light beam is directable onto the reference point from outside of the processing device at an oblique orientation.

11. The positioning aid of Claim 1, comprising a variably projectable light beam.

12. The positioning aid of Claim 11, wherein the variably projectable light beam is operably projected onto the component as one of a point and a diameter of the connecting element.

13. The positioning aid of Claim 1, comprising a variably focusable light beam.

14. The positioning aid of Claim 13, wherein the variably focusable light beam is operably focused onto the component as one of a point and a diameter of the connecting element.

15. The positioning aid of Claim 11, comprising a template, wherein the variably projectable light beam is in operable cooperation with the template such that a device-related interference contour is projectable onto the component.

16. The positioning aid of Claim 15, wherein the device-related interference contour includes one of a diameter of a mouthpiece, a device support diameter, and one of a plurality of geometric shapes including a square, a triangle and an ellipse.

17. The positioning aid of Claim 13, comprising a template wherein the variably focusable light beam is in operable cooperation with the template such that a device-related interference contour is focusable onto the component.

18. The positioning aid of Claim 17, wherein the device-related interference contour includes one of a diameter of a mouthpiece, a device support diameter, and one of a plurality of geometric shapes including a square, a triangle and an ellipse.

19. A method for positioning at least one component in a device for processing the component, the method comprising:

producing a light beam with a light beam emitter;

positioning the light beam emitter at a reference position to operably direct the light beam towards a reference point;

placing a mark on an uppermost one of a component to be processed;

congruently positioning one of the mark and the light beam above the other; and

processing the component.

20. The method of Claim 19, comprising shaping the mark as one of a crosshair, a point and a device-related interference contour.

21. The method of Claim 19, comprising aligning a connecting element with the component at the reference point.

22. The method of claim 21, comprising shaping the mark to match a shape of the connecting element.

23. A positioning aid assembly for a processing device, comprising:
a light beam emitter operably projecting a light beam as one of a
variably projectable light beam and a variably focusable light beam; and
a reference position for operably positioning the light beam emitter
from which the light beam is operably directable towards a reference point;
wherein the reference position is locatable outside of an envelope
of a processing device such that the light beam is operably directable onto the
reference point from an oblique orientation.

24. The assembly of Claim 23, wherein the light beam comprises a
laser beam.

25. The assembly of Claim 23, wherein the reference point is locatable
within the processing device envelope.

26. The assembly of Claim 23, wherein the variably projectable light
beam is operably projectable as one of a point, a diameter of a connecting
element and a device-related interference contour.

27. The assembly of Claim 23, wherein the variably focusable light
beam is operably focusable as one of a point, a diameter of a connecting
element and a device-related interference contour.

28. A method for positioning at least one component in a device for processing the component, the method comprising:

- producing a light beam with a light beam emitter;
- positioning the light beam emitter at a reference position to operably direct the light beam towards a reference point;
- mounting at least one component for processing;
- aligning a connecting element taken from the group including a rivet, a punch rivet, a blind rivet, a rivet nut, a weld nut, a weld stud and a clip with the reference point;
- placing a mark on an uppermost one of the components;
- congruently positioning one of the mark and the light beam above the other; and
- processing both the connecting element and the at least one component.

29. The method of Claim 28, comprising joining the connecting element together with the at least one component.

30. The method of Claim 28, comprising adjusting a height of the light beam to correspond to a total thickness of the at least one component.